

CLAIMS

What is claimed is:

1. An apparatus for improving human mobility on
congealed precipitation when a human is utilizing a snow-
5 traveling device, the snow-traveling device having a
contacting surface, said apparatus comprising:

engagement means for engaging the snow-traveling
device, said snow-traveling device contactably connecting
the human, wherein said human actuates the snow-traveling
10 device by manually maneuvering said snow-traveling
device;

protrusion means for protruding into a mass of the
congealed precipitation, said protrusion means
contactably attached to said engagement means, wherein
15 said human causes the snow-traveling device to be
maneuvered such that the protrusion means is placed into
contact with a mass of congealed precipitation preventing
the snow-traveling device from excess movement; and

fastener means for fastening said engagement means
20 in a first position on the snow-traveling device such
that the protrusion means can be selectively held at the
first position and removed from the snow-traveling device
by a human during the course of an excursion over

congealed precipitation to thereby selectively allow the attachment and detachment of said engagement means.

2. An apparatus for improving human mobility on
5 congealed precipitation as defined in claim 1 wherein said engagement means comprising an upper wall and a lower wall for contactably engaging the snow-traveling device to thereby grip said snow-traveling device causing the engagement means to be releasably fixed in the first position on the snow-traveling
10 device.

3. An apparatus for improving human mobility on congealed precipitation as defined in claim 1 wherein said fastener means further comprises:

15 a first aperture formed in said engagement means, the first aperture allowing the snow-traveling device to pass therethrough;

an upper wall and a lower wall for contactably engaging the snow-traveling device to the engagement
20 means to thereby cause said snow-traveling device to become fixed in the first position;

a tightening slot provided in the upper wall; and

a tightening band and a connector, the tightening band contactably introduced through the tightening slot selectively allowing said tightening band to be inserted into the connector, wherein said tightening band is tightened snugly thereby causing the upper wall to contact the snow-traveling device and fixing said engagement means to said snow-traveling device.

4. An apparatus for improving human mobility on congealed precipitation as defined in claim 1 wherein said protrusion means comprises an elongated member protrusively engaging the congealed precipitation mass.

5. An apparatus for improving human mobility on congealed precipitation as defined in claim 4 wherein said elongated member comprises a first side and a second side, said first and second sides having an angle between them of less than 120 degrees causing the elongated member to penetrate into a mass of congealed precipitation when acted upon by a user of the snow-traveling device.

6. An apparatus for improving human mobility on congealed precipitation as defined in claim 4 wherein said

elongated member contains an anterior and posterior side, said elongated member further containing projections being larger and longer in size towards the anterior side while gradually decreasing in size towards the posterior side.

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7. An apparatus for improving human mobility on congealed precipitation as defined in claim 6 wherein said protrusion means comprises an outer portion and an inner portion, said outer portion contactably attaching the
10 projections along the outer portion of said protrusion means.

8. An apparatus for improving human mobility on congealed precipitation as defined in claim 1 wherein said engagement means and said protrusion means are fabricated from
15 at least one of the materials selected from the group consisting of: thermoplastics, fiber reinforced thermoplastics, thermosetting plastics, and elastomers, all used in injection molding.

20 9. An apparatus for improving human mobility on congealed precipitation as defined in claim 1 wherein said engagement means and said protrusion means are fabricated from a very fine metal powder, combined with a binder material

containing at least one of the materials selected from the group consisting of: stainless steel, copper, alloy steels, molybdenum, tool steels, tungsten, ferrous alloys, other specialty alloys, and custom-blend alloys.

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10. An apparatus for improving human mobility on congealed precipitation as defined in claim 1 wherein said engagement means and said protrusion means are fabricated from at least one of the materials selected from the group consisting of: thermoplastics, fiber reinforced thermoplastics, thermosetting plastics, or elastomers, stainless steel, copper, alloy steels, molybdenum, tool steels, tungsten, ferrous alloys, specialty alloys, and custom-blend alloys.

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11. An apparatus for improving human mobility on congealed precipitation as defined in claim 1 wherein said protrusion means comprises an elongated member protrusively engaging a surface of the congealed precipitation, said elongated member comprising a wedge shaped convex rudder.

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12. An apparatus for improving human mobility on congealed precipitation as defined in claim 11 wherein said

protrusion means comprises an outer and an inner portion, said wedge shaped convex rudder contactably engaging said inner portion to thereby cause said wedge shaped convex rudder to contact the congealed precipitation surface.

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13. An apparatus for improving human mobility on congealed precipitation as defined in claim 3 wherein said connector selectively receives the tightening band whereby said tightening band is prevented from moving by snugly gripping said tightening band to thereby attach said engagement means to said snow-traveling device.

14. An apparatus for improving human mobility on congealed precipitation as defined in claim 1 wherein said fastener means is detachably attached to said snow-traveling device allowing a human to attach said apparatus to the snow-traveling device without the aid of tools.

15. An apparatus for improving human mobility on congealed precipitation as defined in claim 1 wherein said fastener means comprises a structure for releasably attaching the engagement means to the snow-traveling device.

16. An apparatus for improving human mobility on congealed precipitation when the human is utilizing a snow-traveling device, the snow-traveling device having a contacting surface, said apparatus comprising:

5 engagement means for engaging the contacting surface of the snow-traveling device to thereby hold said apparatus in place on said snow-traveling device;

10 protrusion means for protrusively engaging the surface of the congealed precipitation when the human mobilizes the snow-traveling device by contactably engaging the surface of the congealed precipitation with the protrusion means thereby causing the snow-traveling device to be propelled when acted upon by a user controlling the snow-traveling device; and

15 fastener means for fastening said engagement means in a first position on the snow-traveling device such that the protrusion means can be selectively held at the first position and removed from the snow-traveling device by the user.

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17. An apparatus for improving human mobility on congealed precipitation as defined in claim 16 wherein said fastener means comprises a securing device.

18. An apparatus for improving human mobility on
congealed precipitation as defined in claim 17 wherein said
securing device comprises a nut and a bolt.

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19. An apparatus for improving human mobility on
congealed precipitation as defined in claim 16 wherein said
engagement means comprises an upper wall and a lower wall for
contactably engaging the snow-traveling device to thereby grip
10 said snow-traveling device causing the engagement means to
immovable.

20. An apparatus for improving human mobility on
congealed precipitation as defined in claim 16 wherein said
15 fastener means further comprises:

a first aperture formed in said engagement means,
the first aperture allowing the snow-traveling device to
pass therethrough;

an upper wall and a lower wall for contactably
20 engaging the snow-traveling device to the engagement
means to thereby cause said snow-traveling device to
become releasably fixed in the first position; and

a tightening band contactably introduced through a tightening slot selectively allowing said tightening band to be inserted into a connector, wherein said tightening band is tightened snugly thereby causing the upper wall to contact the snow-traveling device fixing said engagement means to said snow-traveling device.

21. An apparatus for improving human mobility on congealed precipitation as defined in claim 16 wherein said protrusion means comprises an elongated member capable of protrusively engaging a mass of congealed precipitation.

22. An apparatus for improving human mobility on congealed precipitation as defined in claim 21 wherein said elongated member comprises a first side and a second side, said first and second side having an angle between them of less than 120 degrees causing the elongated member to penetrate into a mass of congealed precipitation.

23. An apparatus for improving human mobility on congealed precipitation as defined in claim 21 wherein said elongated member contains an anterior and posterior side, said elongated member further containing projections being larger

and longer in size towards the anterior side while gradually decreasing in size towards the posterior side.

24. An apparatus for improving human mobility on
5 congealed precipitation as defined in claim 16 wherein said protrusion means comprises an outer portion and an inner portion, said outer portion contactably attaching the projections along the outer portion of said protrusion means.

10 25. An apparatus for improving human mobility on congealed precipitation as defined in claim 16 wherein said engagement means and said protrusion means are fabricated from at least one of the materials selected from the group consisting of: thermoplastics, fiber reinforced
15 thermoplastics, thermosetting plastics, and elastomers, all used in injection molding.

26. An apparatus for improving human mobility on
20 congealed precipitation as defined in claim 16 wherein said engagement means and said protrusion means are fabricated from a very fine metal powder, combined with a binder material containing at least one material selected from the group consisting of: stainless steel, copper, alloy steels,

molybdenum, tool steels, tungsten, ferrous alloys, other specialty alloys, and custom-blend alloys.

27. An apparatus for improving human mobility on
5 congealed precipitation as defined in claim 16 wherein said
engagement means and said protrusion means are fabricated from
at least one of the materials selected from the group
consisting of: thermoplastics, fiber reinforced
thermoplastics, thermosetting plastics, elastomers, stainless
10 steel, copper, alloy steels, molybdenum, tool steels,
tungsten, ferrous alloys, specialty alloys, and custom-blend
alloys.

28. An apparatus for improving human mobility on
15 congealed precipitation as defined in claim 16 wherein said
protrusion means comprises an elongated member protrusively
engaging the congealed precipitation surface, said elongated
member containing a wedge shaped convex rudder.

29. An apparatus for improving human mobility on
20 congealed precipitation as defined in claim 28 wherein said
protrusion means comprises an outer and an inner portion, said
wedge shaped convex rudder contactably engaging said inner

portion to thereby cause said wedge shaped convex rudder to contact the congealed precipitation surface.

30. An apparatus for improving human mobility on
5 congealed precipitation as defined in claim 20 wherein said connector selectively receives the tightening band whereby said tightening band is prevented from moving by snugly gripping said tightening band to thereby attach said engagement means to said snow-traveling device.

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31. An apparatus for improving human mobility on
congealed precipitation as defined in claim 16 wherein said fastener means is detachably attached to said snow-traveling device allowing a human to attach said apparatus to the snow-
15 traveling device without the aid of tools and instruments.

32. An apparatus for improving human mobility on congealed precipitation when a human is utilizing a snow-traveling device, the snow-traveling device having a contacting surface, said apparatus comprising:

5 engagement means for engaging the snow-traveling device, said engagement means contactably connecting to the human, wherein said human actuates the snow-traveling device by manually maneuvering said snow-traveling device;

10 protrusion means for protruding into a mass of congealed precipitation, said protrusion means contactably attached to said engagement means, wherein said human causes the snow-traveling device to be maneuvered such that the protrusion means is placed into
15 contact with a mass of congealed precipitation preventing the snow-traveling device from excess movement;

fastener means for fastening said engagement means in a first position on the snow-traveling device such that the protrusion means can be selectively held at the
20 first position and removed from the snow-traveling device by a human during the course of an outdoor excursion to thereby selectively allow the attachment and detachment of said engagement means; and

said apparatus is fabricated from injection molding.

33. An apparatus for improving human mobility on
congealed precipitation as defined in claim 32 wherein said
engagement means comprising an upper wall and a lower wall for
contactably engaging the snow-traveling device to thereby grip
said snow-traveling device causing the engagement means to be
immovable.

34. An apparatus for improving human mobility on
congealed precipitation as defined in claim 32 wherein said
fastener means further comprising:

a first aperture formed in said engagement means,
the first aperture allowing the snow-traveling device to
pass therethrough;

an upper wall and a lower wall for contactably
engaging the snow-traveling device to the engagement
means to thereby cause said snow-traveling device to
become immovable;

a tightening band contactably introduced through a
tightening slot selectively allowing said tightening band
to be inserted into a connector, wherein said tightening
band is tightened snugly thereby causing the upper wall

to contact the snow-traveling device fixing said engagement means to said snow-traveling device.

35. An apparatus for improving human mobility on
5 congealed precipitation as defined in claim 32 wherein said protrusion means comprises an elongated member protrusively engaging the congealed precipitation mass.

36. An apparatus for improving human mobility on
10 congealed precipitation as defined in claim 35 wherein said elongated member comprises a first side and a second side, said first and second side having an angle between them of less than about 120 degrees causing the elongated member to penetrate into a mass of congealed precipitation.

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37. An apparatus for improving human mobility on congealed precipitation as defined in claim 35 wherein said elongated member contains an anterior and posterior side, said elongated member further containing projections being larger
20 and longer in size towards the anterior side while gradually decreasing in size towards the posterior side.

38. An apparatus for improving human mobility on
congealed precipitation as defined in claim 32 wherein said
protrusion means comprises an outer portion and an inner
portion, said outer portion contactably attaching the
5 projections along the outer portion of said protrusion means.

39. An apparatus for improving human mobility on
congealed precipitation as defined in claim 32 wherein said
apparatus is fabricated from injection molding and using at
10 least one of the materials selected from the following group:
thermoplastics, fiber reinforced thermoplastics, thermosetting
plastics, or elastomers.

40. An apparatus for improving human mobility on
15 congealed precipitation as defined in claim 32 wherein said
apparatus is fabricated from injection molding from a very
fine metal powder, combined with a binder material containing
at least one selected from the following group: stainless
steel, copper, alloy steels, molybdenum, tool steels,
20 tungsten, ferrous alloys, other specialty alloys, and custom-
blend alloys.

41. An apparatus for improving human mobility on
congealed precipitation as defined in claim 32 wherein said
engagement means and said protrusion means are fabricated from
at least one of the materials selected from the following
5 group: thermoplastics, fiber reinforced thermoplastics,
thermosetting plastics, or elastomers, stainless steel,
copper, alloy steels, molybdenum, tool steels, tungsten,
ferrous alloys, other specialty alloys, and custom-blend
alloys used in injection molding.

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42. An apparatus for improving human mobility on
congealed precipitation as defined in claim 32 wherein said
protrusion means comprises an elongated member protrusively
engaging the congealed precipitation surface, said elongated
15 member containing a wedge shaped convex rudder.

43. An apparatus for improving human mobility on
congealed precipitation as defined in claim 42 wherein said
protrusion means comprises an outer and an inner portion, said
20 wedge shaped convex rudder contactably engaging said inner
portion to thereby cause said wedge shaped convex rudder to
contact the congealed precipitation surface.

44. An apparatus for improving human mobility on
congealed precipitation as defined in claim 34 wherein said
connector selectively receives the tightening band whereby
said tightening band is prevented from moving by snugly
5 gripping said tightening band to thereby attach said
engagement means to said snow-traveling device.

45. An apparatus for improving human mobility on
congealed precipitation as defined in claim 32 wherein said
10 fastener means is detachably attached to said snow-traveling
device allowing a human to attach said apparatus to the snow-
traveling device without the aid of tools and instruments.

46. A method of applying a friction enhancing material
15 to a snow-traveling device, said snow-traveling device having
a first surface for engaging a human and a second contacting
surface for contacting a congealed precipitation surface, said
friction enhancing material comprising a first side and a
second side, said method comprising the steps of:

20 preparing the snow-traveling device for receiving
the friction enhancing material onto the second
contacting surface of said snow-traveling device;

preparing the friction enhancing material for application onto the snow-traveling device to thereby increase the friction between the congealed precipitation surface and the snow-traveling device;

5 interposing an adhesive between the second contacting surface of the snow-traveling device and the first side of the friction enhancing material to releasably adhere the friction enhancing material to the snow-traveling device; and

10 applying pressure to the second side of the friction enhancing material to thereby install the friction enhancing material onto the second contacting surface on the snow-traveling device by placing the adhesive substance into close contact with both the snow-traveling
15 device and the flexible fabric whereby the friction between the second contacting surface and the congealed precipitation surface is enhanced.

47. A method of applying a friction enhancing material
20 to a snow-traveling device as defined in claim 46 wherein said friction enhancing material further comprises a woven slant pile pattern for engaging the congealed precipitation surface.

48. A method of applying a friction enhancing material to a snow-traveling device as defined in claim 47 wherein said woven slant pile pattern further comprises a uniform weave of polyester coated with droplet shaped beads of polyvinyl chloride.

49. A method of applying a friction enhancing material to a snow-traveling device as defined in claim 48 wherein said flexible fabric has a first dimension and a second dimension, said uniform weave comprises a pattern that is the same when viewed in the first direction and in the second direction.

50. A method of applying a friction enhancing material to a snow-traveling device as defined in claim 46 wherein said adhesive at least one chosen from the group consisting of: spray adhesive, double-sided adhesive tape, and a gelatinous adhesive.

51. A method of applying a friction enhancing material to a snow-traveling device as defined in claim 50 wherein said adhesive releasably affixes said friction enhancing material to the snow-traveling device whereby the friction enhancing material is held in place and is kept from moving in relation

to the snow-traveling device as the snow-traveling device is maneuvered on the congealed precipitation surface.

52. A method of applying a friction enhancing material
5 to a snow-traveling device as defined in claim 46 wherein said step of preparing the snow-traveling device further comprises the step of orienting the snow-traveling device such that the human can clean off any loose debris on the second contacting surface of the snow-traveling device.

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53. A method of applying a friction enhancing material
to a snow-traveling device as defined in claim 52 wherein said step of preparing the friction enhancing material further comprises the step of unrolling the friction enhancing
15 material from a roll having an outside diameter less than about four inches.

54. A method of applying a friction enhancing material
to a snow-traveling device as defined in claim 53 wherein said
20 step of preparing the friction enhancing material further comprises the step of exposing the adhesive such that the human can affix the friction enhancing material to the snow-traveling device.

55. A method of applying a friction enhancing material to a snow-traveling device as defined in claim 54 wherein said step of preparing the snow-traveling device further comprises the step of holding said snow-traveling device such that the human can detachably affix said friction enhancing material to the snow-traveling device.

56. A method of applying a friction enhancing material to a snow-traveling device as defined in claim 46 wherein said friction enhancing material further comprises a first end and a second end, said friction enhancing material further comprising a fastener provided at its first end and adapted for fastening the friction enhancing material to the snow-traveling device.

57. An apparatus for improving human mobility on congealed precipitation when a human is utilizing a snow-traveling device, the snow-traveling device having a first end, a second end and a contacting surface, said apparatus comprising:

friction enhancement means for enhancing friction between the contacting surface of said snow-traveling device and the congealed precipitation;

5 a first side provided on the friction enhancement means adapted for making contacting with the snow-traveling device;

a second side provided on the friction enhancement means for contacting the congealed precipitation surface; and

10 means for adhering the first side of said friction enhancement means to the contacting surface of the snow-traveling device to increase the friction between the snow-traveling device and the congealed precipitation to improve mobility of the human on the congealed precipitation.
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58. An apparatus for improving human mobility on congealed precipitation as defined in claim 57 wherein said apparatus comprises a woven polyester coated with polyvinyl chloride droplets.
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59. An apparatus for improving human mobility on congealed precipitation as defined in claim 58 wherein said

woven polyester has a pattern, a first dimension and a second dimension, the pattern being the same when viewed in the first dimension and as when viewed in the second dimension.

5 60. An apparatus for improving human mobility on
congealed precipitation as defined in claim 57 wherein said
apparatus has a first dimension and a second dimension, said
friction enhancement means having droplets protruding out
therefrom such that the droplets protrude into the congealed
10 precipitation when in use.

61. An apparatus for improving human mobility on
congealed precipitation as defined in claim 60 wherein the
friction enhancement means comprises a woven pattern which is
15 the same when viewed in the direction of said first dimension
and said the direction of said second dimension.

62. An apparatus for improving human mobility on
congealed precipitation as defined in claim 57 wherein said
20 means for adhering comprises an adhesive substance.

63. An apparatus for improving human mobility on
congealed precipitation as defined in claim 62 wherein said

adhesive substance is at least one selected from the group consisting of: spray adhesive, double-sided tape, and gelatinous adhesive.

5 64. An apparatus for improving human mobility on congealed precipitation as defined in claim 57 wherein said apparatus further comprises a fastener, said fastener attaching the apparatus to the first end of the snow-traveling device.

10 65. An apparatus for improving human mobility on congealed precipitation as defined in claim 57 wherein said friction enhancement means comprises a substrate which is woven with globules of friction enhancing polyvinyl chloride
15 protruding from said substrate to thereby increase the friction between the apparatus and the congealed precipitation surface.

20 66. An apparatus for improving human mobility on congealed precipitation when a human is utilizing a snow-traveling device, the snow-traveling device having a contacting surface, said apparatus comprising:

engagement means for engaging the snow-traveling device,

said snow-traveling device contactably connecting the human, wherein said human actuates the snow-traveling device by manually maneuvering said snow-traveling device;

protrusion means for protruding into a mass of congealed precipitation, said protrusion means contactably attached to said engagement means, wherein said human causes the snow-traveling device to be maneuvered such that the protrusion means is placed into contact with a mass of congealed precipitation preventing the snow-traveling device from excess movement;

fastener means for fastening said engagement means in a first position on the snow-traveling device such that the protrusion means can be selectively held at the first position and removed from the snow-traveling device by a human during the course of an outdoor excursion to thereby selectively allow the attachment and detachment of said engagement means;

wherein said engagement means comprises an upper wall and a lower wall for contactably engaging the snow-traveling device to thereby grip said snow-traveling device causing the engagement means to be immovable;

wherein said fastener means further comprises a first aperture formed in said engagement means, the first aperture allowing the snow-traveling device to pass therethrough,

an upper wall and a lower wall for contactably engaging the snow-traveling device to the engagement means to thereby cause said snow-traveling device to become immovable, a tightening band contactably introduced through a tightening slot selectively allowing said tightening band to be inserted into a connector, wherein said tightening band is tightened snugly thereby causing the upper wall to contact the snow-traveling device fixing said engagement means to said snow-traveling device;

wherein said protrusion means comprises an elongated member protrusively engaging the congealed precipitation mass;

wherein said engagement means and said protrusion means are fabricated from at least one of the materials selected from the following group: thermoplastics, fiber reinforced thermoplastics, thermosetting plastics, elastomers, stainless steel, copper, alloy steels, molybdenum, tool steels, tungsten, ferrous alloys, other specialty alloys, and custom-blend alloys used in injection molding;

wherein said connector selectively receives the tightening band whereby said tightening band is prevented from moving by snugly gripping said tightening band to thereby attach said engagement means to said snow-traveling device;

wherein said fastener means is detachably attached to

67. An apparatus for improving mobility of a vehicle having pneumatic tires, the pneumatic tires comprising tread, on congealed precipitation, said apparatus comprising:

friction enhancement means for enhancing friction
5 between the tread and the congealed precipitation;

a first side provided on the friction enhancement means adapted for making contact with the tread;

a second side provided on the friction enhancement means for contacting the congealed precipitation surface;
10 and

means for adhering the first side of said friction enhancement means to the contacting surface of the tread to increase the friction between the vehicle and the congealed precipitation to improve mobility of the
15 vehicle on the congealed precipitation.

68. An apparatus for improving mobility of a motor vehicle, the motor vehicle comprising pneumatic tires and the pneumatic tires comprising a tread, on congealed precipitation, said apparatus comprising:

5 friction enhancement means for enhancing friction between the tread and the congealed precipitation;

a first side provided on the friction enhancement means adapted for making contact with the tread;

10 a second side provided on the friction enhancement means for contacting the congealed precipitation surface; and

15 means for adhering the first side of said friction enhancement means to the tread to increase the friction between the vehicle and the congealed precipitation to improve mobility of the vehicle on the congealed precipitation.

69. An apparatus for improving mobility of a bicycle having at least two tires and each of the tires comprising tread, on congealed precipitation, said apparatus comprising:

friction enhancement means for enhancing friction
5 between the tread and the congealed precipitation;

a first side provided on the friction enhancement means adapted for making contact with the tread;

a second side provided on the friction enhancement means for contacting the congealed precipitation surface;
10 and

means for adhering the first side of said friction enhancement means to the tread to increase the friction between the tire and the congealed precipitation to improve mobility of the bicycle on the congealed
15 precipitation.

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